4. A corps of nurses to work in conjunction with the dispensaries, to carry on educational work in the homes, and to supervise the care of patients in the homes.

5. Open-air schools for tuberculous children.

6. In the instance of patients not taken care of in the sanatorium, the community should furnish suitable food, clothing, and sleeping arrangements when families of the patients are unable to supply them.

7. Some person should be provided whose duty shall be to investigate the economic condition and needs of all tuberculous persons.

8. The condition and status of tuberculous persons should at all times be known to the health department. The place and kind of work of those occupied should be known.

Cognizance should be taken of the physical condition of all members of infected households, especial attention being paid to signs and symptoms of infection in members other than the subject of the central case. Record should be made of the spread of infection in households.

9. The relationship of the municipality to the tuberculous should be one of helpfulness and consideration. The individual infected with tuberculosis should look with a feeling of confidence to the health department as a source from which help and advice can be obtained.

10. To prevent the spread of tuberculosis through milk, all milk sold in a municipality should be from tuberculin tested herds and pasteurized.

INTERSTATE MIGRATION OF TUBERCULOUS PERSONS.

ITS BEARING ON THE PUBLIC HEALTH, WITH SPECIAL REFERENCE TO THE STATES OF ARIZONA AND COLORADO.

By A. J. Lanza, Passed Assistant Surgeon, United States Public Health Service.

The following report forms part of an investigation carried on by the United States Public Health Service regarding the interstate migration of tuberculous persons. The report is based upon studies and observations made in the States of Arizona and Colorado, covering a period of eight months from June, 1914.

The migration of tuberculous persons to certain States in the southwest United States is one of the most interesting and complex public health problems. This phenomenon has assumed a status of vital importance to both the migrators and the communities receiving them, presenting as it does medical, humanitarian, and sociological features.

While migratory health seekers are more or less scattered over the two States, the effects of their migration are most evident in rather

sharply defined areas, namely, Denver and Colorado Springs in Colorado, and Phoenix, Tucson, and Yuma in Arizona. Remedial measures designed to meet adverse conditions produced by such migration, are confined to these areas. However, aside from a limited moral influence that can be exerted in a few specific cases only, these southwest communities are helpless to control the migration itself. What might be termed a negative legal status is responsible for the present inability of these places to cope with the difficulties that confront them. An understanding of this phase of the tuberculosis situation is necessary to an adequate comprehension of the situation.

In this report only those features of the matter in hand are considered which have a definite bearing on the public health and have given rise to certain unfavorable conditions that demand attention and relief. No one familiar with the southwest can fail to realize the vast debt it owes to the health seeker. Lawyers, physicians, merchants, and men in all trades and professions, who have become prominent in their own line or who, as successful and useful citizens, have built up the cities and towns of Arizona and Colorado and are still contributing their good influence, are included among the health seekers. The thousands of men and women who have found health and material success in the southwest have been, and are still, a potent force in its development. It is not with these that this report deals, but rather with those who, in their desire to emulate the example of the fortunate ones, have met misfortune and defeat. The endeavor to help these latter calls forth the efforts of not only the physician but the sociologist. It is doubtful whether the needs of the poor or indigent consumptive do not lie rather within the field of the sociologist than that of the physician. At least, the physician unappreciative of, or not in sympathy with, the sociological side of the subject, will work blindly when he comes in contact with it.

Motives and Causes for the Migration of Consumptives.

The motives or causes that lead consumptives to the Southwest in search of health may be grouped under three heads: First, the instinct to move; second, the fame of Colorado and Arizona as health resorts; and third, definite advice to migrate.

There is an instinctive desire on the part of most consumptives to move—to get away from the place where they believe their disease was contracted. They feel that if they can only get to the mountains or "out West where the air is pure," they will recover. To go to some place other than the one he is in is often the main desire of the consumptive, especially when he has but recently learned of his affliction, or feels himself going downhill. Naturally, he tends to travel to those places most advertised and renowned as being favor-

able to the cure of consumption. Colorado and Arizona receive a large portion, if not the majority, of migrating consumptives, being especially well known as having an ideal climate and affording the example of thousands of persons who have regained health in those States, many of whom have returned to their homes to testify to the value of the Southwest as a health resort. Denver has an added popularity owing to the prevailing impression regarding the value of altitudes. Many communities in the Southwest, in the effort to "boost" their localities and attract industrial enterprises, have extensively advertised their advantages of climate and location, with the result of bringing to them consumptives, both rich and poor.

Over and above these first two causes is the definite advice of physicians or others to whom the consumptive may turn for help while still at home. Laymen who venture to advise friends or relatives to "go out West" do so with that well-meaning ignorance that produces so much trouble wherever manifested. Physicians who advise their patients to go to Colorado or Arizona do so because they consider only the medical points at issue, and fail, largely or entirely, to appreciate the sociological features in each case—the patient's finances, the opportunities for him to earn his living in Colorado or Arizona at the same profession or trade which he practices in his own community, what he can do to earn his living at some other occupation if necessary, and what will become of him if his physical condition becomes worse. Unappreciative also of the facilities for the care of tuberculous patients that may be found in their own community or State, and yielding to the desires of the patient himself, many physicians advise a consumptive patient to go "out West." Unmindful of all these considerations himself, generally in a state of terror and apprehension when the diagnosis is first announced to him, and with this advice of physician, relative, or friend ringing in his ears, the consumptive hurries to some southwest town, sacrificing business, financial interests, means of livelihood, anything that will delay his departure for the country where, as he firmly believes, a few months in the bracing climate and "pure air" will put him on his feet again.

Where his financial resources are ample, there is no reason why the consumptive patient should not migrate, but no lack of adequate financial resource, no hindrance of family or ignorance of the method of livelihood in the future can restrain him from speeding to a western health resort when once the idea seizes him and he can secure sufficient money to pay traveling expenses. The fact that he may have but a few dollars and a dependent family does not deter him. In a short time he will be well again and able to earn his living; his physician and friends told him so, and he has known all his life that consumptives who would have died at home get well in the

West. Why then should he risk his life by staying at home? These are the ideas and opinions that are continually quoted by consumptives when questioned as to the reasons that brought them west. Probably a fair number of health seekers coming to Colorado and Arizona without adequate funds do manage to find work and to prosper physically and materially. They and the people who go west provided with sufficient means to support them in their search for health may be compared to the lucky ones in a gold rush. They stand out more or less conspicuously and overshadow the less fortunate, who are forgotten.

Few consumptives, when first acquainted with the nature of their disease, realize the length of time that must be spent in "chasing the cure" before they will be able to resume their occupations. They do not know that from a year to two years of proper living and care are necessary before a person having an active case of pulmonary tuberculosis is justified in again taking up the battle of life. Failure to realize this also means failure to realize the disadvantages of migration and is chiefly responsible for the distress that overtakes so many migrating consumptives.

Colorado or Arizona offers the consumptive a delightful climate, justly considered as most advantageous in aiding in the recovery of tuberculous cases. Denver and Colorado Springs combine climate with the comforts of the larger cities. Climate is the advantage these two States have to offer. This advantage is purely relative. It exists for the person only who is financially able to enjoy it. It does not exist for the consumptive who can obtain it only at the cost of peace of mind and constant worry as to how he will support himself and his family. When climate is purchased at the cost of three meals a day, a decent place to sleep, or exposure of wife and children in unsuitable living quarters, it ceases to be an asset.

The consumptive of moderate means, the salaried man or wage earner without outside resources, perhaps encumbered with a family, when he migrates, say, to Denver, is first of all a stranger in a strange land. He must secure a decent place to live, where his chances of recovery are good as far as cleanliness and ventilation are concerned. There must be to wife and children no risk of exposure, if he has brought them with him. He and his family must be properly fed and clothed, especially himself, and from time to time he will probably need medical attention. There may be emergency expenses, such as may arise from a hemorrhage. Unless his savings are adequate to meet such expenses for at least a year, the consumptive has to contend with worry, which is as harmful in these cases as the disease itself. If he worries about the welfare of himself and his family, it is almost certain that he will resume work before he should do so, and he faces an early breakdown. In any event, when he does

resume work he may find that his earning power has been impaired, and, if his occupation lies along ordinary lines, he may be months in getting work. Furthermore, in Denver he is in a large and prosperous city, it is true, but not a city offering many opportunities for employment in industrial or manufacturing lines. It is a city without many chances for the consumptive employee in any line.

These are the conditions if he progresses favorably, but suppose he does not, how much must all these disadvantages be intensified? Unless the health seeker is so situated that his finances are sufficient to reasonably provide against these obstacles, he has absolutely no right to leave home. Against these obstacles he can balance but one asset—climate. There are certain psychic advantages in travel and change of location, but they do not amount to much for the man who is wondering what he will do when his money is gone. To be sure, most of the disadvantages above enumerated exist everywhere, except as pertains to the opportunities for employment, but no reasonable person will maintain that, having burned his bridges behind him, the migratory health seeker is better fitted to encounter these disadvantages away from home, and where, if misfortune overtakes him, he has no friends to turn to and no just claim upon the community. And when he must finally appeal for help he faces the return to his home of himself and his family as the wards of some charitable organization, with his money and his prospects gone, and his health, and perhaps his self-respect, permanently injured.

Classification of Migratory Consumptives.

The migratory consumptives may be divided, for purposes of study, into four classes. First, consumptives of wealth or ample means, who are a financial and otherwise valuable asset to the community. Second, consumptives of moderate means, who may become valuable to the community if they do well and recover sufficiently to resume work and take an active interest in local affairs before their money is exhausted. Third, indigent consumptives, including those who arrive as indigents and those who become such after arrival. Fourth, the tuberculous tramp.

In the first two classes are included those who have materially aided in the progress and building up of the southwest. The third and fourth classes comprise those consumptives whose care and protection now furnish such serious problems to the communities of Colorado and Arizona. Each of these classes may be subdivided into cases hopeless on arrival, favorable cases, and the doubtful cases that will do well if not confronted by an untoward emergency or misfortune. It is along the general lines of this division into four classes that all effort for the relief of present conditions must be directed, the division being a sociological rather than a medical one. The

situation that confronts the authorities in their efforts to help the consumptive who needs assistance is more often not what shall we do for this person, but who will bear the cost of doing it and where can it best be done?

The consumptive of the first class furnishes little or no material for study. Naturally, he will get good medical attention, and living under first-class conditions he will not be a menace to his fellow man. If he improves and does not return home, he will be an important addition to the community where he settles.

The second class of consumptives furnishes problems peculiar to itself. In this class are included all grades, both social and financial. In general, it may be stated to include those whose migration in search of health implies a certain amount of sacrifice and financial risk. This class, after migrating, while far from being in want or any immediate danger of want is yet never free from a certain definite hazard of failure, not only physical but financial. Comprising as it does the better elements of society, this second class has most to lose and runs the greatest risk in migrating. For example, an insurance agent, a bank clerk, or a skilled mechanic, finding he has moderately advanced tuberculosis and advised to go west, arrives in Denver with his wife and, say, two children. He has turned his available assets into cash, including probably his life insurance, and has anywhere from $800 to $1,200, more or less. He finds a place to live, a little more crowded and not so comfortable as at home because he feels that he has to economize. After eight or ten months, when his money begins to run low, he may be able to go to work, and if he is successful in finding it, may prosper. If his health does not improve sufficiently and he has a breakdown, his money dwindles, privations come, and his wife has to turn to and help support the family. Once this stage is reached, things go from bad to worse, because the family circumstances are no longer favorable for the improvement of a tuberculous member. Friends and relatives at home are called upon, with poor results after the first one or two occasions. These people have too much pride and independence to seek charitable help from either the municipality or other organized body until they are absolutely driven to it, and by that time any help that is given them is merely palliative as far as the consumptive is concerned.

Not many of this second class are enrolled on the books of the charitable organizations. More often, when they are at the end of their resources, they manage to get together enough money to get home and die there, leaving behind an impoverished and usually infected family. If they die away from home the family is dependent upon a municipality upon which it has little or no claim.

This example can be multiplied indefinitely for every kind of salaried worker or wage earner; many get well; many do not.

The factors that work against their recovery are often within their control did they but realize it. They lack, mostly, a proper knowledge of the nature of their disease and proper medical supervision. The first deficiency is the fault of the physician or physicians who treated them at the beginning of their illness; the second is often due to motives of economy. During this investigation, a thing that was very noticeable was the vast ignorance of tuberculosis displayed by the people afflicted with it, although otherwise intelligent and educated. Not merely were they ignorant of what they should do, but they had acquired a number of vicious ideas which they endeavored to put into practice. This lack of knowledge and this false knowledge are chiefly responsible for the misery and suffering of those people who have migrated and who should have stayed at home. The blame for this must, in part at least, be charged against the medical profession.

Some of the second class of consumptives drift into the indigent class, and are considered under that head.

Extent of Migration.

The extent of the migration of consumptives is almost entirely a matter of conjecture, owing to the large number who never figure in any sort of official statistics. More than any other community in the southwest, Denver has become the Mecca of the health seeker. Its location, size, and other attractive features found only in large cities, have all contributed to make it the center for the traveling consumptive. Also, on account of its size, in no other city in Arizona or Colorado are the untoward effects of health migration so evident. For these reasons Denver was chosen as the field for a special study of the question at issue in addition to the general consideration of the subject in the two States.

The records of the board of health of Denver show that in 1905 there were 698 deaths from tuberculosis in all its forms. In 46 of these fatal cases the disease was reported to have developed in the State. In 1906 there were 704 deaths from tuberculosis, 84 of which were in cases reported to have developed in the State. In 1907 there were 695 deaths from tuberculosis, and in 95 of the cases the disease was contracted in the State. In 1908 the figures were 729, and 95 respectively; in 1909, they were 754 and 130; and in 1910, 690 and 90. In 1911 there were 656 deaths from tuberculosis all told, and in 1912, 662; 1913 showed 560 deaths from imported tuberculosis and 73 in cases native to the State.

During 1914 there were 566 deaths from tuberculosis, 74 of which were due to disease contracted in the State, and 388 to disease contracted out of the State; in 104 the origin of the disease was unknown. Previous to 1905, before record was made as to the origin of tuber-

culosis in persons dying of the disease, the number slowly increased from 435 deaths in 1893 to 667 in 1904. The population of Denver in 1910 was 214,973, and it has increased since then by about 8,000 annually, to 245,523 in 1914.

Effects of Travel on Tuberculous Persons.

The effects of travel upon the consumptive himself range from practically none to a severe setback, depending on his condition and the amount of comfort with which he can travel. Travel for considerable distances is, at its best, a severe tax on the advanced consumptive. Where the consumptive has no fever and does not need waiting on, travel for a day or so will exert little influence on his disease. The advanced case, with fever and evident symptoms, should never travel unless it is imperative, and then he should have some one to take care of him.

Changes of altitude, especially where there is an ascent from sea level to a height of five or six thousand feet, are not devoid of risk. Such changes, when sudden, may throw a strain on the respiratory or circulatory system that will overcome the balance of safety. All cases of active tuberculosis should rest for several days when they first arrive at a high altitude until they have become accustomed to the change. It is not uncommon on examining a patient recently arrived in Denver to find an exacerbation of his condition, as compared with records of examinations made just before he started on his journey. The danger of extending the area of infection is a real one, and threatens most those who from ignorance or necessity fail to take proper rest on arrival. This was evident in various patients examined at the Municipal Dispensary in Denver, who had arrived shortly before and who had been walking the streets looking for employment. They showed sudden increase in the amount of involvement and in the severity of their symptoms.

The Indigent Tuberculous.

Those migrating consumptives who arrive in the Southwest as indigents, or become such soon after arrival, have so far furnished all the medico-sociological problems that have engaged the attention of the authorities. Relief for members of the second class is still a matter of uncertainty or sporadic effort, but the indigents by their number and the urgency of their needs have compelled a putting forth of strenuous effort both by municipal and private charities.[1]

By indigents we mean those people who migrate for their health and arrive at their destination practically without funds, or with so little money that it is merely a matter of time before the community has to provide for them. Some of the cases in class 2 who become

[1] This report on indigents is based on a study of the subject in Denver.

unfortunate and do not return home get into the indigent class eventually. The poorer classes of wage earners comprise the greater part of the indigents, people who, misled by ignorance and false hopes, believe that once in Denver their health will speedily return and the problem of making a living will be easily solved. For them there are absolutely no advantages in migration. The disadvantages are emphasized at every turn, and their effects are sure and speedy. These persons arrive singly or with their families with from a few dollars to a hundred dollars, and look for work when they should be at rest. If they find work, a short time spent at it usually disables them completely, and, with money gone, they turn to the city for help.

In Denver, the municipal dispensary furnishes medical aid and advice to the poor consumptive, and those needing hospital treatment are sent to the City and County Hospital and later, perhaps, to the poor farm. Material help is furnished by several agencies that have a working agreement between them. The municipal department of charities and correction provides for those who are legally entitled to assistance and also to single men regardless of legal restrictions. The United Charities of Denver takes care of families not entitled to municipal relief. The Jewish Social Service Federation takes care of the Jewish cases, regardless of legal status, with some exceptions. When the Associated Charities once assumes the care of a family, they continue to hold it even after that family acquires a settlement [1] in Denver.

Relief was furnished indigent consumptives during 1914 by various agencies as follows:

Number of individuals assisted.

Municipal dispensary	342
Associated charities	58
Department of charities and corrections	189
The Craig Colony	165
The Visiting Nurse Association	110
City and County Hospital	285
Total	1,149

Eliminating duplication in the above, there are left something over 900 indigents who were helped by the community at large, not including those receiving help from the Jewish Social Service Federation. This is indeed a formidable showing. Unfortunately, records for previous years can not be given for some of the above, so there is no possibility of comparison in that regard. Having consulted every available source of information, the writer has concluded that the annual migration of indigent consumptives to Denver is about 400.

[1] "Settlement—A residence under such circumstances as to entitle a person to support or assistance in case of becoming a pauper."—Bouvier's Law Dict.

The migration of other consumptives, on a very conservative estimate, will reach at least 2,000, but the actual number is probably far in excess of this.

Before the work of these organizations is considered, some of the legal difficulties and restrictions that surround the relief of the indigent tuberculous should be understood.

Laws of settlement.—A settlement law is effective only within the boundaries of the State which enacts it. The tuberculous indigent who acquires a settlement in Colorado, even though he be a burden on the community during his entire stay, loses his settlement in his home State. The cases in the appendix show some of the difficulties encountered in dealing with indigent persons who go from one State to another in search of health. Although such a person has been a burden upon the city of Denver since his arrival, from a cause well defined and in operation long before such arrival, Denver must continue to support him, and he has no claim on his native town or State after acquiring a settlement in Colorado.

Transportation agreements.—Most of the organized charitable societies throughout the country have signed the "transportation agreement"; that is, they agree not to ship or pass on an indigent to some other town or city without first notifying, and gaining the consent of, the organization that will have to assume responsibility for the indigent when he arrives. Municipal departments of charity are also signing this agreement though there are still a good many that have not done so. Most of the poor consumptives arriving in Denver come on their own initiative or with the aid of friends, relatives, their lodges or church societies, and occasionally of the authorities of some of the smaller towns. The transportation agreement, therefore, binds the Denver authorities, while it does not adequately protect them.

It would seem, therefore, that the fundamental needs are proper settlement laws and protection from the indiscriminate transportation of tuberculous indigents.

Denver and other southwest communities are receiving constantly an influx of poor consumptives. These add nothing to their new abiding places, gain nothing for themselves by migrating, and in the course of such migration lessen their own chances for recovery, contribute constantly to the tuberculous population by infecting their families and those with whom they come into intimate contact, and, aside from the fact that they are imposing an unfair load on new and growing communities, add continually to the burden of tuberculosis and consequent poverty that the country as a whole has to bear. To alleviate this unfavorable condition aid must be sought from the law, but the present legal restrictions tend to favor such migration rather than to prevent it.

First. As a preface to the two points at issue—settlement laws and transportation of indigents—the handling of tuberculous indigents and the relief of tuberculous poor, either medical or material, are essentially municipal functions and should never be left to private individuals or organizations. In these cases we are dealing with persons afflicted with a serious disease, potentially able to spread infection and especially dangerous to those in immediate contact with them. Their supervision and control demand official authority, and other agencies can not successfully control them. It so happens that the lack of a progressive spirit on the part of city officials has forced private individuals and societies to assume, in part or in whole, the responsibilities that properly belong to the municipality, but this is not an ideal condition by any means. When this work is done in a sound and official manner, we will have a definite and competent basis on which to conduct further improvements. This is not in any way a criticism of the fine and worthy work that is being done by the charitable organizations of Colorado and Arizona, but the fact remains that this work should not be left to them, and they themselves often feel the lack of proper authority.

Second. When it becomes necessary to furnish relief, medical or material, to a consumptive who has migrated to Denver (or elsewhere) in search of health, after having established the legal residence of that consumptive prior to such migration, the municipality of Denver should be in a position to charge against his own State the expenses of such relief regardless of the length of time over which it extends. This repayment should also include railroad fare when it is necessary or advisable to return the consumptive or his family to their home. It is possible that when this question has received the consideration that it demands, it may appear just legally to compel the return of an indigent consumptive, provided the trip may be taken without injury to the patient.

Over and above these considerations, which pertain to the relief of migratory and indigent consumptives from a purely local point of view, it must be remembered that such migration from other States into Colorado and Arizona is essentially an interstate matter.

The statement is not infrequently made in Colorado and Arizona that after all, these States owe their progress, wealth, and development to the health seeker, and that the least return the citizens of these States can make is to contribute to their charities, municipal and private, sufficient money to relieve tuberculous indigents who have been attracted to them. There might be some reason in this if the receiving of charitable aid under such circumstances were for the good of the consumptive, but no reasonable person can maintain that it is better for a consumptive to be "down and out" in a strange place, burdened perhaps with the care of a family for whom he can

no longer provide, than it is to be at home where the need for relief may not occur and where he is eligible for treatment in a State sanatorium, toward the upkeep of which he has probably contributed in the way of taxes.

Relief of Tuberculous Indigents in Denver.

The Municipal Dispensary was opened in March, 1914. From that time to December 31, 342 patients were treated there, 268 males and 74 females. Their length of stay in the State previous to applying for assistance, was as follows:

In Colorado over one year	114
Six months to one year	47
Three months to six months	12
One month to three months	22
One week to one month	21
Less than one week	16

One hundred and fourteen patients had been in Colorado more than a year, though all had come with tuberculosis, and many had been dependent on outside aid for a considerable time previous. One hundred and twenty-eight cases in all had been in the city and State less than a year. There were 50 more cases in which there was no record of stay, but all were imported. Old inhabitants, miners, homesteaders, and the like numbered but 30, and 5 out of the total number were born in Colorado, including 1 child. About 50 were sent to the City and County Hospital. Thus, of the total 342, 282 were clearly imported, 30 were doubtful, and 30 had apparently contracted the disease in the State.

The City and County Hospital, during the year 1914, treated 285 cases.[1] About 50 of these are included in the above enumeration, leaving 235, nearly all of which were imported cases and also indigent.

The Craig Colony, so called, had during the year 1913, 126 admissions, and during the year 1914, 165 admissions, with an average age of 36. Practically all were migratory health seekers; all were men, and according to the rules of the institution, no one on entering could be possessed of more than $25. Not more than 3 had been in the City and County Hospital, and, as far as is known, there is no further duplication in these figures.

The Associated Charities, in 1911, assisted 195 tuberculous cases, including transient men (in later years taken care of by the Department of Charities and Correction). These were 13.56 per cent of all cases and they cost $315, not including clothes, shoes, and other help.

In 1912 there were 122 new tuberculous cases and 27 recurrent, including transient men. The tuberculous numbered 10.15 per cent

[1] Records of previous years not obtainable.

of all cases, and $391 were expended on them, besides clothing and other help.

In 1913 there were 47 new cases and 20 recurrent, a total of 67, transient men no longer included. This was 10.21 per cent of all cases and cost $419, exclusive of other help.

During 1914 there were 58 cases assisted, of which 47 were new; 10.28 per cent of all the cases were tuberculous, and the cash expenditure for their care was $314. The work of this association during 1913 and 1914 was confined to families, so the number of tuberculous cases represented about one-third the actual number to whom relief was given on that account, nor was the cash expenditure by any means all the help given.

The Visiting Nurse Association in 1911 attended 110 tuberculous cases; in 1912, 241 tuberculous cases; in 1913, 85 tuberculous cases; and in 1914, 110 tuberculous cases. This association estimates that about one-half their cases are original and one-half referred by other charities. To be sure, not all these cases are indigent, but they have all reached the point where they require assistance from the community.

During the year 1914 the Department of Charities and Correction handled 189 cases of tuberculosis, involving 470 individuals. There were 93 men without families and 8 women who were alone. The remaining 88 cases were in families having together 369 individuals. Of the total number of cases, 58 had been in Denver less than one year and 78 between one and five years. Eighteen of the remainder had also come from other States. Fifty-three were in addition treated at the City and County Hospital or the poor farm, or both. On these consumptives and their families there was expended by this department $3,800.40, which does not include their care at the hospital or the poor farm.[1]

While it is difficult to form a comparison with previous years, the general opinion of the various charitable agencies was that the burden of indigent tuberculosis was increasing yearly, or, at least, was more apparent and gave them more trouble than formerly.

The Tuberculous Tramp.

Tuberculous tramps are usually young men who wander from one place to the other in the southwest, working when they are able and can get a job. When not working they are a burden on the particular locality they happen to be in. At any time their ability to work is below par, and as the work they can get is usually such as requires considerable bodily strength, they are not able to support themselves continuously. They appeared to be more prominent in Arizona communities, whither they flock in the winter

[1] For summary of typical cases, see appendix.

time, leaving by passing freight trains bound for Colorado or California when the hot weather comes on. In Denver they blend more readily with the other indigents and are not so easy to determine. The attending physician of the Craig Colony in Denver thinks that not more than 10 per cent of the men there could be classed as tuberculous tramps, and out of the 342 patients at the Municipal Dispensary only 8 could be so defined from the information they themselves gave.

The extent of the wanderings of the tuberculous tramps is often remarkable, as is the length of time they can keep going before they are finally disabled. As in the case of other indigents, when they apply at the office of any organized charity an effort is made to get in touch with their relatives and seek assistance from their homes, but by the time an answer is received, the tuberculous tramp is generally on his way elsewhere. From motives of shame he is apt to travel under a false name, and as long as he is able to keep on his feet the main reason for his applying to the organized charities is to secure transportation to some other town. The smaller communities are often glad to get rid of him at this price, but where the transportation agreement is in operation such assistance is refused, whereupon he frequently sinks out of sight. These tuberculous tramps are a pitiable and miserable class, always looking for some other place where they feel sure they will improve. When in Denver they think they can get a light job in El Paso; when in El Paso, Phoenix or Tucson offers most hope, and thus they circle around until they land at some county hospital for their final illness. Some get a little money from home occasionally, but on the whole their maintenance is always at the expense of the community through which they are passing. It would be to the interest of all concerned if it were possible to place these men in a sanatorium, but lack both of a suitable place and money to keep them would prevent any such action on the part of county health officers even were there legal justification for their restraint. They wander from place to place, continually impairing their chances for ultimate recovery and continually contributing their quota to the spread of tuberculous infection. It should be unlawful to pass these men from one place to another,[1] and the method of caring for them should be the same as outlined for other indigents.

Arizona.

There is no State institution for consumptives in Arizona, and but one county tuberculosis hospital, that of Maricopa County (Phoenix). The private hospitals throughout the State constantly do charitable work by taking in needy consumptives, but it was not possible to make an estimate of the amount of such charity.

[1] There is such a State law, apparently inoperative.

During the year ended June 30, 1910, there were 430 deaths from all forms of tuberculosis in the State recorded as being in imported cases and 57 deaths recorded as of native whites of the State; 261 deaths from tuberculosis occurred in Maricopa County.

During the year ended June 30, 1911, there were 432 deaths from imported cases of tuberculosis and 63 recorded as of native whites; 255 deaths from tuberculosis occurred in Maricopa County.

During the calendar year 1912 there were 461 deaths from imported tuberculosis and 46 among native whites, with 287 deaths from tuberculosis in Maricopa County.

During the calendar year 1913 there were 502 deaths in imported cases of tuberculosis and 116 deaths from tuberculosis recorded as in native whites, showing a slight increase in both imported cases and native whites from year to year.

The Maricopa County tuberculosis hospital, during the last three months of 1911, took care of 42 patients; during 1912, of 92 patients, at a cost of $7,745; and during 1913, of 101 patients at a cost of $5,704. In 1912 there was 1 and in 1913 there were 4 Mexican inmates; all other cases were imported. During 1913 there was expended in railroad fares $1,534, making a total of $7,238 expended in county funds on indigent and migratory consumptives.

The Associated Charities of Phoenix, during the year from April 1, 1913, to April 1, 1914, received 690 applications for relief from indigent consumptives, expending on these about $4,000 (about 30 per cent of their total available funds). Railroad fare home took about one-fifth of this sum. The Phoenix authorities estimate the annual migration of consumptives to Phoenix at about 1,200, including all classes. Their experience led them to believe that most of the indigents did not become such until after six months' stay.

The Sisters' Hospital in Phoenix does considerable relief work among poor consumptives requiring hospital care, and St. Luke's Home (a private institution) also takes in some free patients.

There is a very apparent necessity, in Phoenix, for a free municipal dispensary for consumptives, but the city authorities and physicians who were questioned were opposed to the idea on the ground that it would attract so many indigent consumptives to their city as to swamp their resources. As it is, the physicians and the hospitals seem to be ever ready to extend their services at the request of the Associated Charities. The financial burden imposed by migratory and indigent health seekers would appear to be heavier in Phoenix than elsewhere, and it is not surprising that that city should endeavor to discourage such migration as much as possible by withholding aid. The population of Phoenix, in 1910, was 11,134.

No provision is made for indigent consumptives in Pima County (Tucson) except admission to the Sisters' Hospital on contract with

the county, and this is done only where it can not possibly be avoided. The general plan of both the county authorities and the Associated Charities is to discourage, and refrain from assisting, these people as much as possible. Near Tucson is a tent colony, called Tentville, which in summer time shelters about 500 people, estimated to be about one-third of the number of health seekers that come to Tucson annually. Of the inhabitants of Tentville 99 per cent are tuberculous and 95 per cent are indigent (estimate of the Associated Charities). The sanitary conditions in Tentville are wretched, and while the Associated Charities have done what they can, limited financial resources have prevented them from furnishing more than milk and clothes to these unfortunates; they are endeavoring (June, 1914) to secure the services of a visiting nurse for Tentville for the winter of 1914–15. The mayor and the head of the Associated Charities both estimated that Pima County expended from $9,000 to $10,000 a year, mostly in the form of public charities, for the relief of indigent consumptives. As in Phoenix, and for the same reason, there was a strong sentiment against any dispensary or municipal institution for tuberculosis, unless it was to be financed by the State. The physicians are at the call of the Associated Charities. The population of Tucson, census 1910, was 13,193.

Spread of Infection During Travel and After.

The spread of infection by migratory consumptives on railroad trains is probably inconsequential. The care that is taken to keep sleeping cars in a clean and sanitary condition probably eliminates them as sources of tuberculous infection. The common drinking cup and the common towel are things of the past on trains.

Hotels may act as spreaders of infection having its source in the passing guest, according to their cleanliness, but the average hotel furnishes comparatively little chance for such spread. The cheap lodging house, where men are crowded together in large rooms and where there is more or less promiscuous spitting, is much more liable to spread infection, especially in the instance of men weakened by exposure and lack of proper food. Much is heard in Denver and Phoenix and elsewhere of the vast amount of infection that is spread all over the town and which is a constant menace to the population. The greater part of this talk has no real foundation. In the light of our present knowledge of tuberculosis, the "open" consumptive is most dangerous to his immediate family and others with whom he may be thrown into intimate contact. Tuberculosis does not seem to be contracted through a single or limited exposure, as is smallpox or scarlet fever. Were it otherwise, every occasion that brought us into contact with our fellowman would be fraught with danger; a meal in a café, a ride in the street car, a visit to the picture show or the

theater, a drink at the soda fountain—any of these in a tuberculosis health resort would probably be sufficient to produce the disease.

Members of the household, and especially the children, of the consumptive who has come to the end of his resources in the southwest, and who is living in crowded and unclean rooms and often sleeping in the same room with other members of the family, can hardly hope to escape infection, and that they do not escape is the experience of observers in the Southwest. While this is true everywhere, and can not be charged entirely to migration, certainly such migration, with its consequent impoverishment, has not improved or bettered the children's chances.

A number of times in Colorado and Arizona towns the writer has seen advanced consumptives at soda fountains, and these places are a rendezvous for children. Soda-fountain attendants are particularly likely to be careless in handling glasses, cups, spoons, etc., and the writer has observed more than once an advanced consumptive put down his glass and spoon, which were then carelessly rinsed in standing water and placed on the shelf for the next customer. Soda-fountain utensils are common eating and drinking devices in the most vicious sense of the word, and the danger to children under these circumstances is most apparent. Several of the Arizona drug stores have substituted waxed paper cups and containers that are used but once. This precaution, together with the proper cleansing of spoons, makes these soda fountains free from danger.

In hotels, cafés, and other eating places the tableware is generally cleaned in machines, or at least hot water and soap are necessarily used to remove the grease. Dirty eating places are potentially a source of infection, but it is doubtful whether even in these the tableware receives only the careless rinsing that suffices for soda fountains.

Migratory consumptives may become dangerous to the community in which they locate by securing employment in places where milk or other foodstuffs are handled. This is a matter for the regulation of the local health authorities.

Conclusion.

The statistics contained in this report and the observations based on them are sufficient to show that the migration of tuberculous persons into Colorado and Arizona has resulted in a variety of unfavorable conditions. These conditions affect both the migratory consumptive and the communities to which he migrates. Moreover there is no evidence to warrant the belief that these conditions will tend to improve of their own accord, or respond to any but vigorous action. The fundamental causes of these unfavorable conditions are certain defects or omissions in our laws, which permit the indiscriminate transportation of diseased indigents and which tend to make

impossible any satisfactory adjustment of the claims which the Southwestern States may justly be considered to have against the communities furnishing the migrants.

Appendix.

The following typical cases are quoted from the records of the Denver Department of Charities and Correction:

De C., a bookbinder, 17 years' residence in Chicago. In Cook County Hospital January to October, 1914. Arrived Denver, October, 1914, with signed chart from physician in Chicago advising him to go there. Had secured money to travel on from the secretary of the ——— Church. After arrival in Denver he begged for help from door to door, and applied to the city December 1, 1914, anxious to return to Cook County Hospital. After correspondence with the aforementioned secretary, the latter realized his responsibility for this man and advanced $26 to pay his way back to Chicago.

D. Z., Italian barber, owned his own business in Chicago for 11 years. July, 1912, sold his business and came to private sanatorium in Denver, very ill with tuberculosis. In September, 1912, his wife and five children, ages 10 years to 3 months, followed him. In January, 1913, they were in need, and applied to the Federated Charities. This organization tried to induce them to return home, but they refused to go. They still had some savings and lived on the neighbors, with occasional help from the man's lodge and his church. In September, 1913, having lost his "settlement" in Chicago, it was no longer possible to return him, so his church, his lodge, and the city department formed an agreement to support him. He died in November, 1914, having cost the department $639. The family are now living on his insurance, which will be exhausted before the children come of working age. They will again become dependent upon the city.

L. L. Three days in Denver, from Philadelphia, applied for help. Very sick, though not far advanced. Beat his way out, having lost his money before he started. Was unwilling his family should know of his plight, but was finally persuaded that they should know. Was sent to hospital pending reply from Philadelphia. The relatives replied generously and placed him in a private sanatorium, where his disease was arrested.

C. M. Marble polisher, who lived in Philadelphia all his life until 1911. Then began wandering through Pennsylvania, Maryland, Ohio, out to California, back to Illinois, Missouri, Iowa, Nebraska, Wyoming, Idaho, Utah, Nevada, and back to California, staying a few weeks or months in each place. From California, beat his way to Denver, arriving October 27, 1914. Applied for aid November 4, was sent to the hospital, and died 15 days later.

S. B. Unskilled laborer, arrived in United States 1904 and in Denver 1907, having migrated there for tuberculosis, accompanied by his wife and four children, eldest 11. After lingering for 5 years, during which time the family received more or less help from individuals, he died. A year ago the city began pensioning the mother at $40 a month and must continue the pension for two years more; then at a reduced rate for four years more, until the second child reaches working age.

S. A Jewish community in the east sent to Denver a tuberculous tailor, his wife, and four children, the man being received as a patient in the National Jewish Sanitarium. Two years later he died. The society that sent him admitted its responsibility and sent relief, which, however, was not sufficient. The widow is now applying for a mother's pension in Colorado. All four children are now tuberculous.

B. Dying consumptive, wife and three children, 11 to 3, sent to Denver by church in Tampa, Fla., with letter of introduction recommending them to all charitably

inclined people. Went direct from depot to department office. They refuse to leave Denver. There is no power of deportation and no recourse against the community that sent them. The neighbors are now supporting them, the organized charities having refused any help other than transportation home. When this man dies, the city will have to support his wife and children, and his wife will doubtless apply for a mother's pension.

F. L. A railroad brakeman, 24 years old, just arrived in Denver, very sick and an advanced case. Sent from dispensary to hospital. He gave false address and it took some time to locate his mother. Then came a telegram from the mother asking for news, followed by a letter containing money with promise to support him in sanatorium. He had left the hospital after 12 days' stay and his whereabouts were unknown. He was advertised for in the papers throughout the country, and three weeks later the mother wrote he had been located in care of the Associated Charities of Phoenix.

T. L. Said he was a painter, but also admitted he was a gambler, from Buffalo. Said he had been in Denver one year and wanted transportation to El Paso, where he claimed to have a brother who would care for him after arrival. The department paid for his board and lodging, while El Paso charities endeavored to locate brother, who did not exist. Patient was then sent to poor farm and, finding his stories did not help him, admitted he was still a legal resident of Buffalo. This having been verified, he was returned to Buffalo, a brother and sister there promising to look after him. He was in Denver 11 months all told and cost the city $85.86.

For permission to quote these cases the writer is indebted to the courtesy of Miss Vaile of the Department of Charities and Correction.

The following interesting case is taken from the records of the Associated Charities, through the kindness of Mrs. Williams, of that organization:

C. became disabled from tuberculosis in Chicago in 1910. The Swedish society there raised a fund of $300 for him, and sent him to a sanatorium in Denver, he having no means of his own. This was in February, 1910. In May, 1910, he came out of the sanatorium, rented a cottage, and in spite of the opposition of the local charities, Chicago forwarded his wife and four children. They planned to take in boarders and live on the remainder of the $300 fund, which was sent them at the rate of $8 per week through the charities there. C. did odd jobs, his wife did sewing, but there never was a time when they were not receiving aid from the neighbors, charitable individuals, and some churches. With all this they lived very comfortably; and three of the children were triplets, who were exploited at a considerable pecuniary profit. In July, 1911, they moved to Golden, where some kind person gave them a shack, rent free, and C. worked in a truck patch. This did not suit, so six months later they were back in Denver. C. went downhill steadily, and in July, 1914, he died and was buried free by a charitable undertaker. The fund which had helped support them was exhausted in the latter part of 1912, after which they were maintained entirely at the expense of the community of Denver. The wife did bundle washing, but has been failing in health continually and is presumably tuberculous. In January, 1915, the effort was made to return the widow and four children to Chicago. This was objected to by the Chicago charities, on the ground that it would now take three years' residence in Cook County before Mrs. C. would be eligible for a mother's pension, during which time they would have to support her. Mrs. C. may apply for a mother's pension in Colorado, though there never was a time since the family came to Colorado that they were independent. This case is unusual in that they did receive some assistance from the people that sent them to Denver, for two years.